REMARKS

In Claims 1-4, 6-12 and 14-17 stand rejected as obvious over US Patent 3,152,865 (Koch) in view of US Patent 6,773,690 (Noweck). The rejection is respectfully traversed.

According to the Koch reference, hydrous alumina precipitated by hydrolysis at low temperature tends to transform the monohydrate (boehmite) to one or more trihydrates. High trihydrate-derived aluminas and catalyst produced therefrom have lower physical strength and stability, as seen in Koch at column 2, lines 1-7. Accordingly, Koch teaches to carry out the hydrolysis in the presence of chelating agents such as organic polyacids at a temperature range of 0-38°C (about 32-100°F) (see column 4, lines 18-19.) The purpose of the chelating agents as expressly taught by Koch is to avoid aging of hydrous alumina obtained from "cold" hydrolysis.

The present invention solves the problem of providing a boehmitic alumina having an A-conversion temperature of about 1400°C and higher when calcied. To this end, Applicant's process provides that the hydrolysis of the aluminum alcoholate occurs between 50 and 95°C (Claim 1 as amended) in an aqueous solution with pH values above 9.5, followed by hydrothermal aging, preferably in the presence of a substituted carboxylic acid at a temperature of above 120°C. Koch does not disclose such a process.

Koch does not disclose any aging step. Rather, as noted above, Koch teaches that aging will result in high trihydrate-derived aluminas and catalyst produced therefrom, having deteriorated physical properties and stability.

The deficiencies of Koch are not solved by resort to the Noweck reference. Noweck discloses a method of producing boehmitic alumina with specific crystalline

properties (column 3, lines 44-46). As taught in Noweck, the method comprises hydrolysis of aluminum alcholates at temperatures between 30° and 150°C (see column 2, lines 39-40) followed by hydrothermal aging at temperatures between 30° and 240°C, optionally in the presence of bidentite bases or metallic or non-metallic oxides. Not only does Noweck not disclose Applicant's claimed temperature range for the hydrolysis step, Noweck is also silent on the use of substituted carboxylic acids in the hydrolysis step.

Additionally, Noweck discloses hydrolysis at much higher temperatures (column 2, lines 37-39 and Example 1) which are in contrast to the express teachings of Koch. Accordingly, any attempt to combine Noweck with Koch emasculates the teachings of the Koch reference. In other words, the skilled artisan, seeing the express teachings of Koch would not be motivated to resort to Noweck to modify the teachings of Koch. Indeed, doing so would require altering the Koch process in a manner directly contrary to its express teachings.

While Noweck teaches aluminum oxides that remain stable at temperatures of about 1000°C when calcifide (column 4, lines 32-33), neither Noweck nor Koch provides any teaching or suggestion of hydrolysis and/or hydrothermal aging in the presence of substituted carboxylic acids. Additionally, there is no suggestion in either of the references that one can achieve high A-conversion temperatures achieved by Applicant's process.

It should also be noted that according to Applicant's claimed invention, the amount of modifier (carboxylic acids) present in the hydrolysis and hydrothermal aging step, must be maintained at a low level and, additionally, at a hydrolysis temperatures of 50-95°C and a hydrothermal agency temperature at above 120°C in the presence of this

reduced amount of modifier to achieve the high A-conversion temperature. This is significant since Noweck applies much larger amounts of modifier in order to block crystal growth. Again, this teaching of Noweck is directly contrary to Applicant's claimed invention.

With respect to Applicant's prior argument regarding whether the word "about" should modify the number 8 or the range of 8 to 9.5, the Examiner has taken the position that the word modifies the entire range and not just the lower limit. If in fact this was the case, and as is common in claim drafting, and if the word "about" was intended to modify the whole expression "8 to 9.5", then the phrase would read "about 8 to about 9.5". Applicant again urges that the teaching of Koch should be read for what it fairly teaches, which is "about 8" but not "about 9.5" as opposed to "up to 9.5". Applicant hastens to point out that to read the range of as including "about 9.5" effectively broadens the teaching of Koch beyond the express language.

For reasons stated above, it is respectfully submitted that all claims presented for consideration are patentable over Koch in view of Noweck.

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims are in condition for allowance, which is hereby earnestly solicited and respectfully requested.

Respectfully submitted,

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